

Prodigy™ SingleE Virtex-7 Logic Module

The S2C Prodigy SingleE V7 Logic Module is the industry's smallest form-factor, all-purpose, stand-alone prototyping system based on Xilinx's Virtex-7 2000T FPGA. The system has 960 I/Os on 8 high-speed connectors, and users have access to S2C's 80+ daughter cards to quickly build prototype targets. Utilizing S2C 5th generation technology, users can perform an array of runtime features remotely through both Ethernet and USB. Multiple Prodigy SingleE V7 Logic Modules are also designed to be used together easily through a newly designed system controller port controlled from a single PC.

Large Capacity & Scalable

- Up to 20M ASIC gates and 45MBs of internal memory with Xilinx Virtex-7 2000T FPGA
- On-board DDR3 SO-DIMM socket supports up to 8GB memory
- Small form-factor (260mm x 170mm)
- Multiple Prodigy Logic Modules can be conveniently connected together to expand capacity by stacking, use of interconnection modules/cables or a motherboard

Advanced Clock & Reset Management

- 4 pairs of differential programmable clock sources (0.2-700MHz)
- 3 pairs of differential MMCX clock inputs
- 1 single-ended oscillator socket
- 40 pairs of differential clock sources on 8 I/O connectors
- 3 design clocks can be output through 3 pairs of MMCX connectors
- 3 global resets can be triggered on-board or from software
- Clocks and resets are programmed conveniently in S2C Prodigy Player Pro Runtime Software

Flexible & Powerful I/Os

- 960 I/O pins through 8 high-speed I/O connectors
- I/O voltage can be adjusted to 1.2V, 1.35V, 1.5V or 1.8V through runtime software in GUI with 4 status LEDs on-board to indicate I/O voltage
- 16 Gigabit transceivers through 2 high-speed differential I/O connectors can run up to 10Gbps

High Performance

- Up to 60W of power for FPGA
- Equal trace length for I/Os from same I/O connector
- Pre-tested DDR3 memory speed at up to 1600Mbps

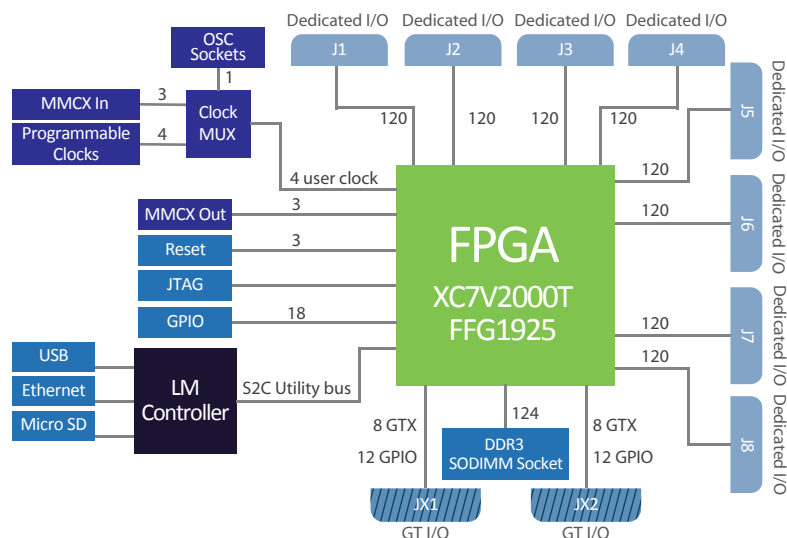
High Reliability

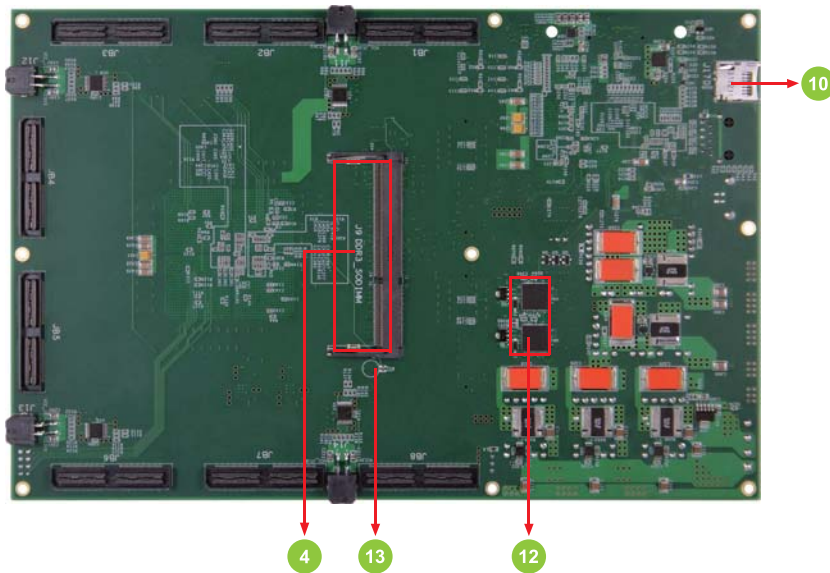
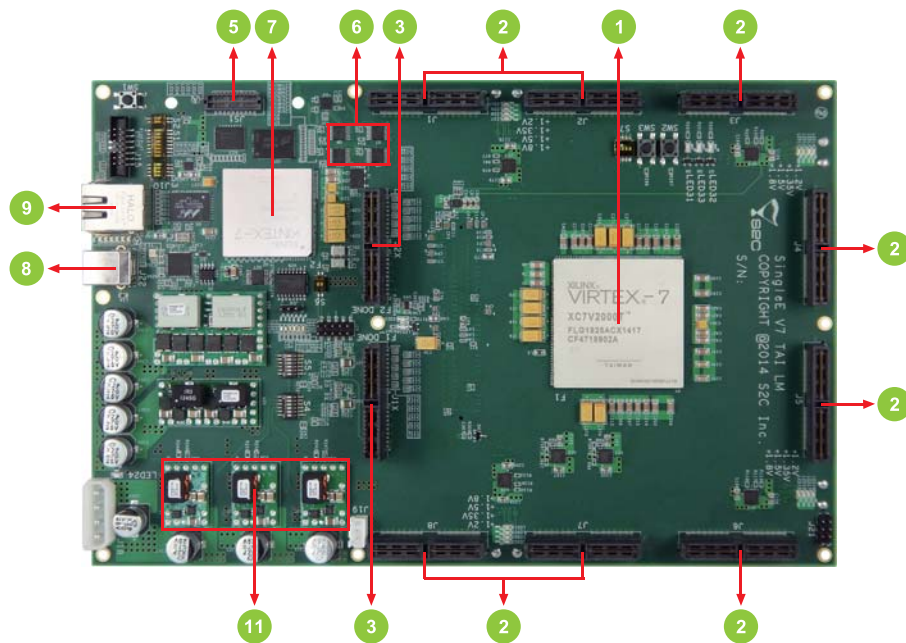
- Self-Tests – Isolate design issues from board issues conveniently with a software GUI
- Monitoring of on-board voltage, current and temperature with a software GUI
- Automatic shut-down upon detection of over-current, over-voltage or over-temperature

Ease-of-Use

- Multiple FPGA configuration options through Ethernet port, USB port, JTAG and micro SD card
- User Test Area - push buttons, status LEDs, switches and pin headers for testing and debugging
- Virtual SWs & LEDs for simple tasks such as changing a setting or indicating a condition remotely
- On-board battery charging circuit makes FPGA bin file encryption easy
- Optional S2C Prodigy ProtoBridge™ AXI software to co-model with software/simulation models in transaction-level
- Optional S2C design implementation & debug software
- Compatible with S2C's off-the-shelf pre-tested daughter boards

Block Diagram





- 1 Xilinx Virtex-7 2000 FPGA
- 2 Dedicated I/O
- 3 GTX I/O
- 4 DDR3 SO-DIMM Socket
- 5 System Control Port
- 6 Advanced Clock Management
- 7 LM Controller
- 8 USB Port
- 9 Gigabit Ethernet Port
- 10 Micro SD Card
- 11 Power Module
- 12 Smart Power Monitors
- 13 Battery for Encryption

V7 Logic Module Configuration

Product Type	QuadE	Quad	Dual	SingleE	SingleA	SingleB
Target Devices	4 * 7V2000T	4 * 7V2000T	2 * 7V2000T	1 * 7V2000T	1 * 7V2000T	1 * 7V2000T
ASIC Logic Gates	80M	80M	40M	20M	20M	20M
FPGA Memory	180Mbits	180Mbits	90Mbits	45Mbits	45Mbits	45Mbits
DDR3 SO-DIMM slot	4	2	1	1	1	-
DDR2 SO-DIMM slot	-	2	1	-	-	1
External User I/O	1,440	1,440	1,200	960	840	840
Inter-FPGA Nets	192 * 6	192 * 6	530	-	-	-
SerDes Transceivers	48 GTX	48 GTX	32 GTX	16 GTX	16 GTX	16 GTX
Remote Power Recycle	Available	-	-	Available	-	-